MAP Team Performance: Saving Money, Saving Time -
The "No Permit Required" Case; SR 202 Fall City Revetment

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Saving Money, Saving Time:
By checking in with the MAP Team, WSDOT was able to proceed with confidence to complete a project as originally planned; avoiding a year's delay, additional permitting requirements, and potentially worse consequences. In less than an hour, the MAP Team saved WSDOT and the public over $600,000 and potentially over $1.5 million.

The Problem:
Near the confluence of the Raging River and the Snoqualmie Rivers in Fall City, Washington, the Snoqualmie River is eroding its north bank, threatening SR 202 and a new bridge over the Snoqualmie River.

The Proposed Solution:
WSDOT proposed to install a revetment in the small amount of upland remaining between the river and the highway. The original plan was to dig a trench in the uplands, above the Ordinary High Water Mark and install the revetment. Then the river could naturally erode the bank over time until it reached the revetment, protecting the road and the bridge.

The Risk:
WSDOT staff consulted with liaisons at the resource agencies and learned that permits would not be required for the proposed solution. However, as designs were finalized, it was discovered that the riverbank was cracked, undercut, and more unstable than previously believed. WSDOT staff determined that the work as proposed posed a high risk of causing some bank failure with a subsequent discharge of material into the river during construction.

The MAP Team is consulted:
Due to the high risk of a discharge into the river, WSDOT staff developed an alternate plan involving a temporary cofferdam to hold the bank and isolate the work area. Addressing this risk would delay the work until the following year, due to the additional time needed for redesign and permits, including ESA consultation. The MAP Team was consulted to determine the type of permits required and expected timing.

The Outcome:
All the resource agencies represented on the MAP Team advised WSDOT that the risk was acceptable, and that the work should proceed as originally planned, that same year, without the need for in-water work permits.

Saving Time:
The ability to quickly meet with senior level staff of all of the resource agencies saves time. It only took one meeting to reach this outcome with a high degree of confidence that permits would not be required and the original plan could be constructed.

Saving Money:
The work as originally planned and constructed actually cost $185,989.23 for design, contract plans and specifications, and $454,193.23 to construct.
Total Actual Cost: $640,182.46

The work as proposed to address the risk of bank failure could have cost up to $200,000 more for design and permitting, including ESA consultation. Construction costs could have doubled with the addition of in-water work and the need to identify an approvable access point for construction.
Estimated Total for Alternate Plan: $1.3 million

The Worst Case Scenario:
The proposal to delay the work a year carried with it additional risk factors that could have led to a "worst case scenario." If a severe winter storm occurred in the winter of 2004, the bank could have eroded completely undercutting the highway and threatening the bridge. In fact, in the winter of 1996, severe winter floods did undercut SR 202 just upstream of this location resulting in lane closures for a period of time. In the winter of 2004-2005, after the work was done, there were a series of heavy rain-on-snow events, which, while perhaps not the total worst case scenario, did cause the river levels to rise above the banks and might have triggered emergency actions by WSDOT (see attached photo.)

In the event of the worst case scenario, WSDOT would have initiated emergency response measures, placing rock in the river to protect the highway and the bridge, resulting in severe environmental impacts. The follow-up plan to repair or replace the road and construct a new retaining wall would require substantial design work and permits from every agency. If the bridge were damaged or even lost, work might need to done on both sides of the river. The long-term environmental and economic impacts, including the cost of mitigation and lost capitol investments, are difficult to quantify, but they would be very high and are not included in these cost estimates.
Worst Case Costs (without environmental or economic costs):

- Emergency Repairs: $100,000 minimum;
- Repair Road and New Retaining Wall: over $1,000,000;
- Replace Bridge: $1,000,000+

Total: over $2.1 million

Therefore, in less than an hour, the MAP Team saved WSDOT over $1.5 million and substantially reduced the potential environmental impacts.